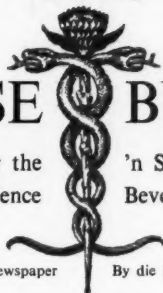


MEDICAL PROCEEDINGS

MEDIESE BYDRAES

A South African Journal for the
Advancement of Medical Science

'n Suid-Afrikaanse Tydskrif vir die
Bevordering van die Geneeskunde



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IN THIS ISSUE · IN HIERDIE UITGAWE

Die Pulmonale Poort: The Pulmonary Portal
Kwashiorkor (Infantile Malnutrition) · Pterygium

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Index of Contents (P. ix)

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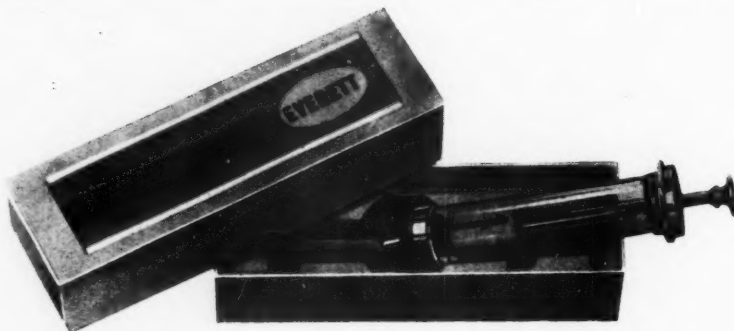


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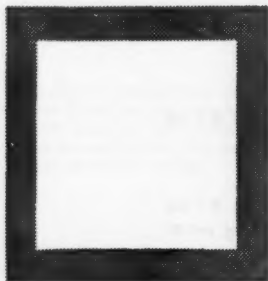
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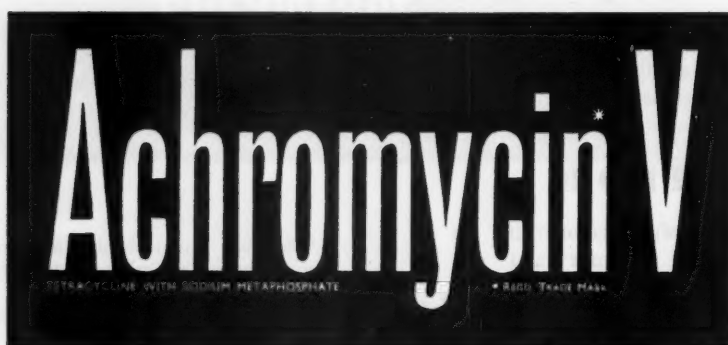
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Medical Proceedings · Mediese Bydraes

Vol. 3 · No. 23

INDEX · INHOUD

9 November 1957

<i>Redaksioneel: Die Pulmonale Poort—Plaaslike en Sistemiese Effekte</i>	533	III. The Alcoholic: Psychological Aspects. <i>Dr. H. E. van Hoepen</i> ..	545
<i>Editorial: The Pulmonary Portal—Topical and Systemic Effects</i>	533	IV. The Treatment of Insomnia in Alcoholics During Ambulant Therapy and Rehabilitation. <i>Dr. Boris Serebro</i>	547
<i>Kwashiorkor (Infantile Malnutrition). Dr. Pincus Catzel, Dr. J. J. Theron and Dr. P. J. Pretorius</i>	535	<i>Notes and News: Berigte</i>	549
<i>A Medical Atlas: Pterygium. Dr. L. Schrire</i>	536	<i>Preparate en Toestelle: Cathopen; Proponesin; Natabec Kapseals; Alpa Alnea Enkel-lens-Reflekskamera</i>	550
<i>Symposium on Alcoholism:</i>		<i>Preparations and Appliances: Cathopen; Proponesin; Natabec Kapseals; Alpa Alnea Single Lens Reflex Camera</i>	551
I. Alcoholism: Some Physiological and Biochemical Aspects. <i>Dr. M. C. Frame and Dr. I. Bersohn</i> ..	537	<i>Correspondence: Problems of Cardiac Arrest (Dr. H. Bentel)</i>	552
II. The Management of Alcoholism. <i>Dr. C. Biccard Jeppe</i>	541		

Medihaler

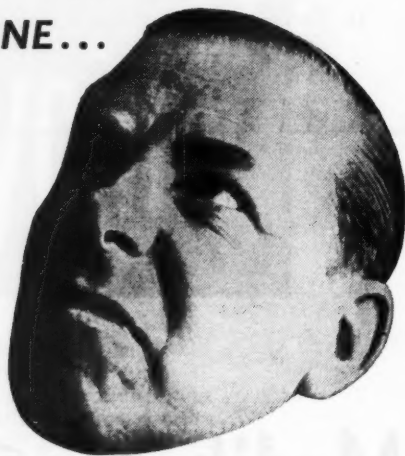
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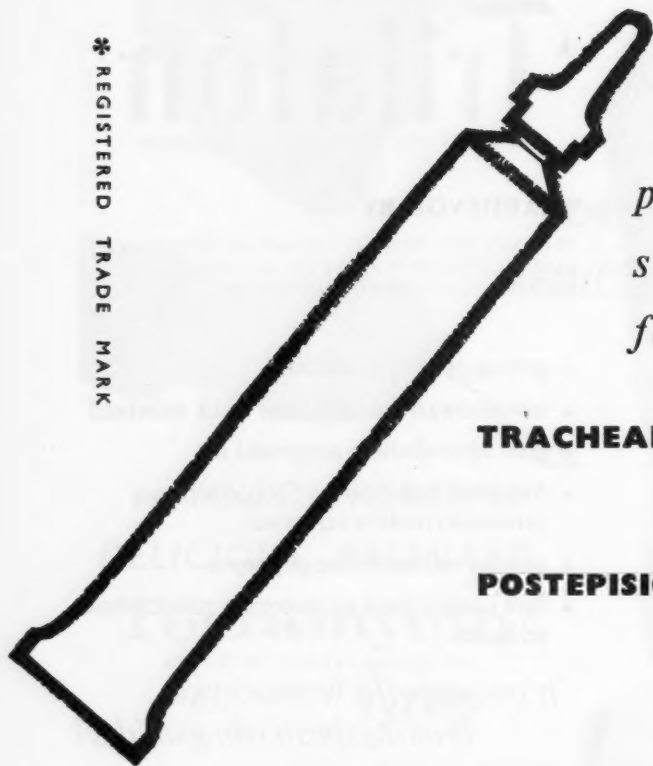
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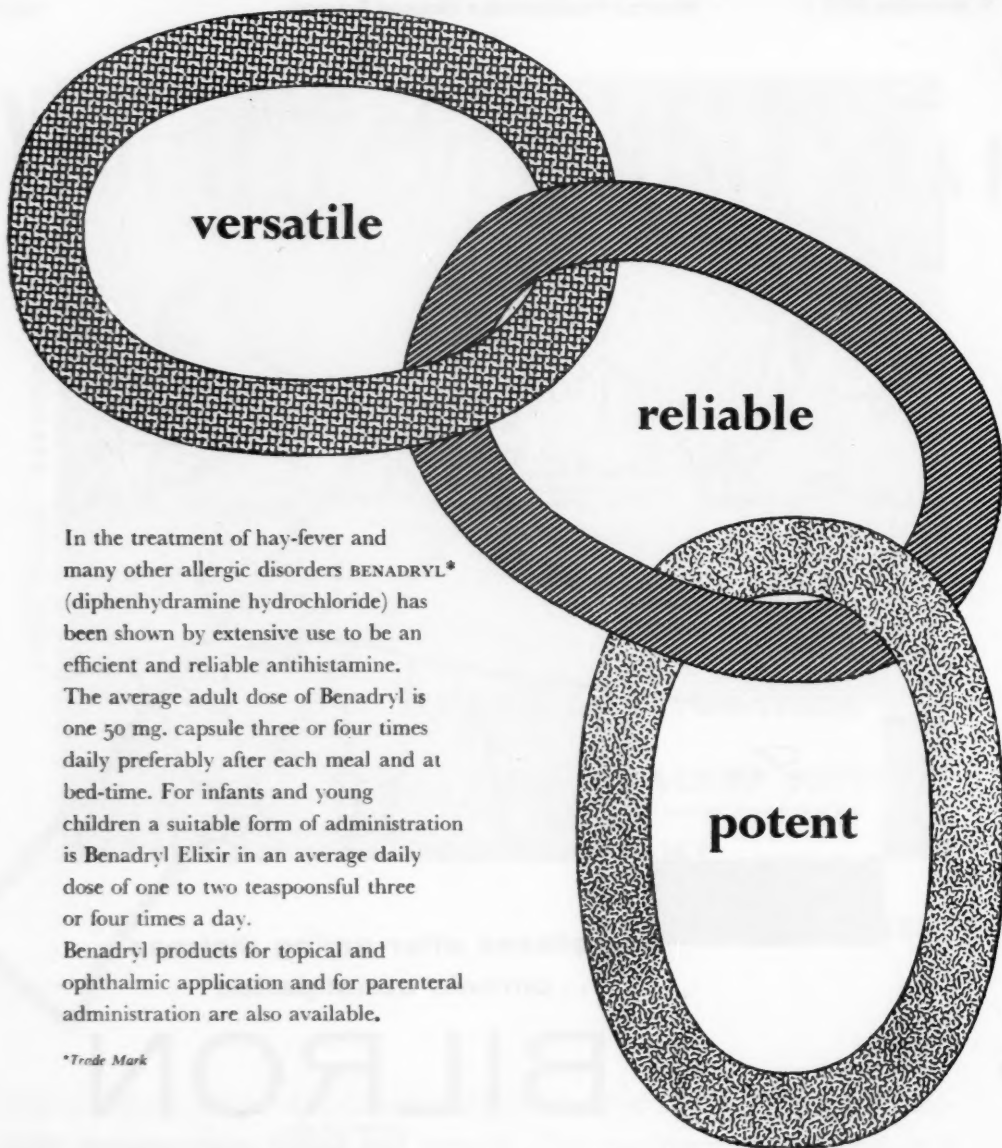
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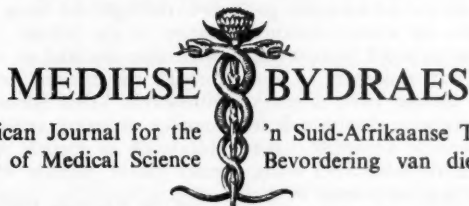


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P.O. Box 1010 · Johannesburg Posbus 1010 · Johannesburg

Vol. 3

9 November 1957

No. 23

REDAKSIONEEL · EDITORIAL

DIE PULMONALE POORT

PLAASLIKE EN SISTEMIESE EFFEKTE

Die bakterievernietigende doeltreffendheid van fyn spuitstowwe in die vorm van aërosolstuijsel (waar die druppeltjies min of meer koloidale dimensies aanneem) is teen hierdie tyd goed bekend. Besonder geslaagde ontsmetting kan met behulp van hierdie tegniek bewerkstellig word. Andrewes¹ het aangetoon dat as 'n voldoende fyn gesuspenseerde hipochlorietoplossing in die lug gespruit word, dit die vermoë besit om byna al die hemolitiese streptokokki, influensaviruse, en ander organismes gesuspenseer in die toetsvolume van die behandelde lug, te vernietig.

Aërosole en aërosoltoestelle word ook op 'n groot skaal gebruik vir die vernietiging van insekte bv. in vliegtrui, en speel dus 'n uiters belangrike rol in die voorkoming van die siektes wat deur insekte oorgedra word.²

Die toepassing van die aërosolbeginsel op inasemingsterapie waar daar verwag kan word dat mikroskopiese druppeltjies 'n effek in die diepte van die long sal hê, is egter bemoelijk deur die probleme verbonde aan die produksie van 'n stuijsel wat fyn genoeg vir hierdie doel sal wees.

THE PULMONARY PORTAL

TOPICAL AND SYSTEMIC EFFECTS

The bactericidal efficacy of fine sprays in the form of aerosol mists (in which the droplets approach colloidal dimensions) is by now well established. Very successful disinfection can be achieved by this technique. Andrewes¹ has shown that a sufficiently finely suspended hypochlorite solution, when sprayed into the air, can rapidly kill almost all the haemolytic streptococci, influenza viruses and other organisms suspended in the test volume of air being treated.

Aerosols and aerosol dispensers are also in extensive use for disinsectization, e.g. of aircraft, where they play a most vital role in the prevention of insect-borne disease.²

The application of the aerosol principle to inhalation therapy, where microscopic droplets can be expected to produce effects within the depths of the lung, has been complicated by the difficulty of producing a sufficiently fine mist.

For successful inhalation and retention in the lung, the particle size must be within the range of 0.5–8 microns in diameter. Larger particles are either swallowed or deposited in the upper regions of the respiratory tract,

1. Andrewes, *Lancet* (1940): **2**, 770.

2. Deskundige Komitee oor Insektvergifte, Sewende Verslag (1957): Wêreldgesondheidsorganisasie, Tegniese Verslae, No. 125. Pretoria: Van Schaik se Boekwinkel (Edms.) Bpk., Posbus 724.

1. Andrewes, *Lancet* (1940): **2**, 770.

2. Expert Committee on Insecticides, Seventh Report (1957): WHO Technical Report Series, No. 125. Pretoria: Van Schaik's Bookstore (Pty.) Ltd., P.O. Box 724.

Vir suksesvolle inaseming en inhouding in die long moet die deeltjie-grootte binne die bestek van 0.5–8 mikrons in deursnit wees. Groter deeltjies word of ingesluk of gedeponeer op die boonste streke van die asemhalingskanaal. Daarenteen gedra die kleiner deeltjies hulle amper soos 'n gas en word byna almal uitgeasem. Materiaal wat resorteer in die beperkte bestek tussen hierdie twee uiterstes kan behou word vir maksimum-absorpsie deur die long self. Die essensiële kenmerk is die uitsakkingstyd wat die materiaal-deeltjies nodig het om af te sak oor 'n gegewe afstand in die medium waarin dit geïntroduseer word. Hierdie uitsakkingstyd hang af van 'n ingewikkelde vergelyking bestaande uit etlike veranderlike faktore soos die grootte van die deeltjies, hul digtheid en, in 'n minder mate, hul fatsoen.

Dit skyn asof die fisiese probleme verbonde aan die produksie van 'n aerosolstuifsel wat dit moontlik maak om geneesmiddels in die diepte van die longe te deponeer, te bowe gekom is ten gevolge van onlangse navorsingswerk, veral in die Verenigde State. Vinnige absorpsie en 'n daaruit voortvloeiende plaaslike sowel as sistemiese effek is tans moontlik. Dit is 'n heeltemal nuwe benadering vir sover dit die toediening van geneesmiddels betref, want die verdunning en vertraging wat onafskiedelik aan die mondelinge roete verbonde is, sowel as die ongerief van die parenterale roete kan nou vermy word. Formules het reeds hul verskyning in die Verenigde State gemaak vir die verligting van angina pectoris (met oktielnitriet), asook vir die verligting van kongestie en infeksie van die neus.

Preparate bevattende adrenalin en sy chemiese verwante is ook beskikbaar gestel. Hulle kan vrygestel word met behulp van 'n eenvoudige toestel in geskikte voortdrywingsmiddels wat teen die temperatuur en in die atmosferiese druk van 'n gewone kamer 'n gas-vorm aanneem, maar in die houer, waar die druk effens hoër is, in 'n vloeibare toestand verkeer. Wanneer die mengsel van voortdrywingsmiddel en geneesmiddel uitgedryf word, word dit onderhewig aan atmosferiese druk en verander dan oombliklik in 'n fyn aerosolstuifsel bestaande uit mikroskopiese deeltjies wat op 'n geslaagde wyse tot in die diepte van die longe geïntroduseer kan word.

Op hierdie manier is dit moontlik om geneesmiddels toe te dien wat 'n byna oombliklike effek op die gladde spier van die brongiale boom het. Die gevolg is dat toestande soos asma maklik en op 'n doeltreffende manier behandel kan word.

Intensiewe navorsingswerk word ook gedoen met ander geneesmiddels wat in voldoende hoeveelhede deur die pulmonale poort geïntroduseer kan word om die verlangde sistemiese effek uit te oefen. Sover ons weet, het nog net een fabrikant hierdie besondere gebied op 'n handelsgrondslag benader; maar die welslae wat reeds behaal is met die aanwending van geneesmiddels vir die hart en die lugpype sal verdere navorsingswerk ongetwyfeld aanmoedig so dat daar vasgestel kan word of daar in werklikheid 'n breër bestek is vir die introduksie van ander geneesmiddels deur die pulmonale bedding.

whereas smaller particles behave very much as a gas and are almost all exhaled. Material in the narrow range between these two extremes can be retained for maximum absorption through the lung itself. The essential feature is the fall-out time required for the particulate material to settle a given distance through the medium into which it has been introduced. This fall-out time depends on a complex equation consisting of several variables such as particle size, density and, to a lesser extent, particle shape.

Recent research, particularly in the U.S.A., appears to have overcome the physical problems of providing aerosol mists which permit the deposit of medicaments in the depths of the lung. This provides rapid absorption and hence local as well as systemic action—an entirely new approach to the administration of drugs, without the dilution and delay inseparable from the oral route and without the inconvenience of the parenteral route. Formulations have already appeared in the U.S.A. for the relief of angina pectoris (with octyl nitrite) and also for the relief of nasal congestion and infection.

Preparations containing adrenaline and its chemical relatives have also been made available. These can be released through a simple apparatus in appropriate propellents, which are gaseous at room temperature and atmospheric pressure, but which exist in the liquid state at a slightly higher pressure in the container. When the mixture of propellant and medicament is expressed, it becomes subject to atmospheric pressure and immediately vaporizes into a fine aerosol mist composed of microscopic particles which can be effectively introduced into the depths of the lungs.

In this way it is possible to apply drugs which exercise an almost immediate effect on the smooth muscle of the bronchial tree, with the result that conditions such as asthma can be treated readily and efficiently.

Intensive research is being pursued with other medicaments which may be introduced through the pulmonary portal in sufficient quantity to produce the desired systemic effects. As far as we are aware, only one manufacturer has as yet ventured into this field on a commercial basis; but the success achieved in applying medications to the heart and the bronchi will clearly encourage further investigators to find out whether there is, in fact, a wider scope for the introduction of other drugs through the pulmonary bed.

KWASHIORKOR (INFANTILE MALNUTRITION)*

UNUSUAL CHANGES IN THE ERYTHROCYTE SEDIMENTATION RATE
OCCURRING DURING ITS TREATMENT

PINCUS CATZEL, M.B., B.Ch., M.R.C.P.E., D.C.H.,

J. J. THERON, M.B., Ch.B., M.Sc.

and

P. J. PRETORIUS, M.D.

*Department of Paediatrics, Pretoria General Hospital; and the National Nutrition Research
Institute, Council for Scientific and Industrial Research, Pretoria*

During the course of our investigations into the biochemical and haematological changes occurring in kwashiorkor in Bantu infants, we were struck by the regularity with which the erythrocyte sedimentation rate (ESR) was within normal limits on admission to hospital. Using the Wintrobe method for determining the ESR⁷ we found that 70 of 86 cases (81%) had, on admission to hospital, a sedimentation rate of less than 20 mm. per hour. Even if the upper limit of normal is arbitrarily defined as 10 mm. per hour, then 64% of the cases were normal (Table 1). This finding is particularly unusual because, as Campbell¹ pointed out, infection occurs almost invariably in kwashiorkor.

Most of the infants we studied had infections related to the respiratory, alimentary or urinary tracts, and many had septic skin lesions in addition to one or other of these infections. Such infections, if they occurred in well-nourished children, would be associated with an abnormal ESR. Gillman and Gillman² also

noted, in a small series of cases, that 14 of 15 'infantile pellagrins' had a normal ESR, but they did not perform serial studies. They, too, were impressed by the lack of correlation between the presence of infection and the ESR.

With the institution of therapy in the form of antibiotics to control the infection, and a high protein diet (usually in the form of skimmed milk) it was found that the ESR rapidly rose to abnormal levels, reaching a peak at the end of the second week (Table 1). As reported elsewhere, there is also a rapid rise in serum proteins,^{3,5} serum lipids,⁴ serum cholesterol,⁵ and blood urea⁴ at this period, and we are observing notable changes in the red and white cell count, blood volume, packed cell volume and haemoglobin. All these factors are at present being subjected to statistical analysis in relation to the ESR, and will be reported elsewhere.

Walker *et al.*⁶ recently reported the occurrence of abnormal sedimentation rates in apparently healthy Bantu men applying for positions on the mines, and noted that after 4-15 months on a nutritionally sound diet, the ESR returned to normal. We do not know

* This paper is submitted for publication with the permission of the South African Council for Scientific and Industrial Research, Pretoria.

TABLE 1: THE ERYTHROCYTE SEDIMENTATION RATE IN BANTU INFANTS SUFFERING FROM KWASHIORKOR, DURING THEIR FIRST TWO WEEKS IN HOSPITAL.

				Number of Cases		
				On Admission	Seventh Day	Fourteenth Day
Less than 20 mm. per hour	..	..	..	70 (81.4%)	19 (27.1%)	6 (7.3%)
More than 20 mm. per hour	..	..	..	16 (18.6%)	51 (72.9%)	76 (92.7%)
Total No. of Cases	..	..	..	86 (100%)	70 (100%)	82 (100%)
Less than 10 mm. per hour	..	..	..	55 (63.9%)	8 (11.4%)	1 (1.2%)
More than 10 mm. per hour	..	..	..	31 (36.1%)	62 (88.6%)	81 (98.8%)
Total No. of Cases	..	..	..	86 (100%)	70 (100%)	82 (100%)

whether the ESR would return to normal in our cases of kwashiorkor, if provided with a nutritionally sound diet for the same length of time, because it is impossible to follow the cases after discharge from hospital. However, we have noted that in 23 cases followed for 7-9 weeks in hospital, there is a tendency for the ESR to fall, but in only 2 instances did it fall to less than 20 mm. per hour. In no cases did the ESR fall to less than 10 mm. per hour before discharge from hospital.

We conclude that kwashiorkor is, as far as we know, the only disorder in which the ESR is normal at the height of the illness, and becomes abnormal as a result of treatment.

The unusual relationship between the changes in the ESR and other clinical, biochemical and haematological changes in the blood are being further investigated and will be reported in the near future.

OPSOMMING

Kwashiorkor is, sover ons weet, die enigste ongesteldheid waar die Eritrosiet-afsettingsnelheid normaal bly as die siekte sy hoogtepunt bereik, en abnormaal word ten gevolge van behandeling.

Die buitengewone verhouding tussen die veranderinge in die EAS en ander kliniese, biochemiese en hematologiese veranderinge in die bloed word verder ondersoek, en eersdaags sal verslag daarvoor gedoen word.

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A MEDICAL ATLAS

PTERYGIUM

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This common condition is seen especially in the hotter, drier and windier parts of the country. It consists of a fold of thickened conjunctiva which is raised and extends on to the cornea. Pathologically it is a degeneration of Bowman's membrane and the superficial corneal lamellae, with replacement by vascularized tissue covered by conjunctival epithelium.

pupillary aperture. The right pterygium in fact has almost covered the pupillary aperture. The temporal pterygia are also very marked.

It is remarkable that this elderly woman has not reported for treatment earlier. It is only the defective vision which has resulted from the coincident senile cataracts that caused her to seek medical attention.



Though usually seen only at the nasal border of the cornea, double ones, i.e. on the nasal and temporal sides, may occur.

Fig. 1 shows an unusually marked bilateral double pterygium. The nasal pterygia have extended until they have encroached on the

OPSOMMING

'n Buitengewoon opvallende tweesydig dubbele oogvlek word geïllustreer.

Dit is merkwaardig dat die bejaarde vrou by wie dit voorgekom het, mediese hulp ingeroep het slegs weens die defekte gesig wat uit meegaande seniele katarakte voortgespruit het.

SYMPOSIUM ON ALCOHOLISM

I. ALCOHOLISM

SOME PHYSIOLOGICAL AND BIOCHEMICAL ASPECTS

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In considering the problem of alcoholism, cognizance must be taken of the fact that two distinct processes are involved. In few diseases is the futility of postulating a dichotomy between physiological and psychological behaviour of an organism so obvious as in alcoholism. In this condition the complete interdependence of the two aspects is so clearly demonstrated that all argument as to which is paramount is patently irrational.

By definition an alcoholic is a person who takes alcohol initially to gain relief from what is to him an intolerable stress. This state of tension is developed by some faulty adjustment to life situations. After the ingestion of a certain amount of alcohol a true addictive process becomes operative and compulsive drinking develops. At this stage the 4 symptoms comprising the syndrome of addiction are in evidence, viz.:

1. Relief from tension on administration of the drug of choice.
2. Psychic dependence.
3. Somatic dependence.
4. Tolerance.

It is interesting to note that the tolerance to alcohol is not in effect a consumption tolerance, i.e. it is not dependent on a more rapid or efficient break-down in the addict, but is an actual tissue tolerance. The tissue response to a given amount of alcohol is different in the alcoholic from that of the so-called social drinker. The adjustable ability on a functional level to alcohol is considerably increased in the alcoholic. In the early stages of the particular drinking bout, in order to maintain some degree of functional efficiency, it is essential that some alcohol be taken. As the somatic dependency increases, so more liquor is taken until a stage is reached where some aspects of the patient's life (the physical, domestic, economic or social) becomes so impaired as to cause a complete breakdown of his compensatory mechanisms of adjustment and treatment becomes an emergency measure.

SOME PHYSIOLOGICAL CONSIDERATIONS

Alcohol is one of the few substances absorbed directly and unaltered into the blood stream. After ingestion, between 5 and 11 minutes are necessary before demonstrable amounts appear in blood specimens. About 25% of the amount taken is absorbed directly from the stomach and the remainder from the small intestine.

Factors which control absorption rate are:

1. *State of the Stomach Contents.* Food taken just before drinking slows the rate of absorption. The presence of certain fats, particularly milk fats, interferes most with absorption. Protein matter also inhibits absorption, and an equal bulk of carbohydrate interferes least with absorption.

2. *Rate of Ingestion.* Large quantities of alcohol taken at once would give a higher ultimate blood level than the same amount of alcohol taken over a period.

3. *Concentration of the Ingested Alcohol.* The optimum concentration for rapid absorption appears to be between 10% and 20%. Lower concentrations are comparatively poorly absorbed and higher concentrations also decrease absorption rate because:

(a) The local narcotic effect inhibits gastric motility;

(b) The irritant effect of a relatively high concentration of alcohol causes an exudation of mucus which interferes with absorption.

4. *Action of Drugs.* Drugs which stimulate the sympathetic or depress the parasympathetic nervous system lower the absorption rate.

5. *Habituation Factor.* The general rate of absorption is greater in habituated subjects.

A time factor is operative in reaching a blood alcohol concentration relative to the amount taken. One to two hours, with an average of about 1½ hours is necessary before maximum blood levels are reached in relation to the amount taken. This fact of course further indicates that there is no absolute absorption rate. On the other hand, the break-

down rate of alcohol is more or less constant, and is roughly 0.015 mg. per 100 c.c. per hour. A clinical impression of some interest is that addicted subjects once having attained a state of intoxication, remain in this state for longer periods than the norm, thus indicating an impaired break-down rate.

Alcohol is not a stimulant but has a depressant action. It appears to have a selective cephalo-caudal action on the central nervous system, affecting first the phylogenetically most recently developed functions controlled by the frontal lobe. Thus self critical powers, inhibition, and awareness and evaluation of environmental situations appear to be the first affected. The apparent stimulation observed in those who have taken alcohol is, in fact, due to the removal of those faculties developed by social pressures and demands. The depression of reasoning power and judgment is also much in evidence.

The progressive march of depression of function involving the motor, sensory, associative and visual cortex and finally the deep centres resulting in interference with autonomic function, is apparent on observing subjects consuming increasing quantities of alcohol.

A fact of considerable interest, from a medico-legal standpoint, has been demonstrated by Himwich,¹ who observed that tolerance to alcohol is greater during the break-down period than the build-up period, i.e. while consuming alcohol a subject may show

signs of intoxication at a level of say 0.18 mg. per 100 c.c., whereas after having reached a peak of say 0.3 mg. per 100 c.c., he will appear to be recovered from his intoxication at a level of say 0.22 mg. per 100 c.c.

It is of moment to note that after some years of compulsive drinking, this tolerance appears to be lost and small amounts of alcohol have rapid and disastrous effects.

THE PATHOLOGICAL RESPONSE TO ALCOHOL

Because the psychological and physical factors in alcoholism are so completely interdependent one on the other, it is impossible to discuss abnormal reaction to alcohol divorced from the personality make-up of the patient. Stress will therefore be laid on the physical factors without implying that they are the only or even the most important aspect in alcohol addiction.

Both clinical observations and biochemical investigations have illustrated the presence of an abnormal reaction to alcohol in the addicted person. There is strong presumptive evidence that from the first, and long before compulsive drinking becomes operative, the response to alcohol in the problem drinker is different from that of the norm. It is a frequently reported fact that on observing the effects of alcohol on groups of young people, frontal lobe activity such as faculties of self criticism, inhibition, evaluation and reaction to external and internal environments was dampened down to a greater degree in some in comparison with the average after the ingestion of a given amount of alcohol. The narcotic effect of the alcohol with subsequent relief from tension was greater in the apparently susceptible individual. Furthermore, in dealing with large groups of alcoholics, similar reports are spontaneously given when the drinking pattern is reported by the patient. Paradoxically, those who do react to alcohol with great relief from discomfort also report that *pari passu* with this reaction goes the ability to consume far greater amounts of alcohol than can their peers, without signs of intoxication. In other words, both qualitative and quantitative factors are involved in the total pathological response.

On biochemical investigation Fleetwood² was able to demonstrate fairly conclusively a difference of response to alcohol in the addicted patient. In summary, the work consisted of a demonstration of the fact that in various emotional states the symptom complex was dependent upon the production of enzymes by the organism. In anxiety, the existence of varying

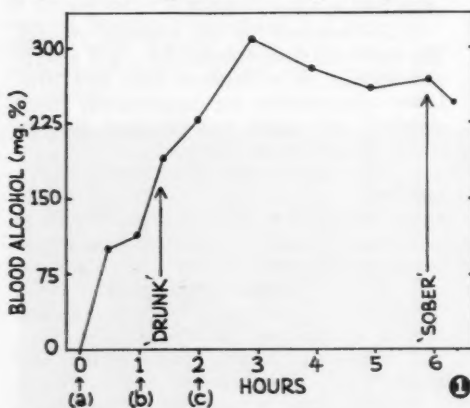


Fig. 1. The blood alcohol concentrations consequent to drinking at 'a' (1.0 g. per Kg.), at 'b' (0.25 g. per Kg.), and at 'c' (0.25 g. per Kg.). The point at which the patient revealed the signs and symptoms of alcoholic intoxication (170 mg. per 100 c.c.) and the point at which the patient subsequently became sober (270 mg. per 100 c.c.) are depicted by arrows.

amounts of an epinephrine-like substance was shown; whereas in tension and resentment two substances (different from each other) but both with an acetylcholine-like reaction, were found to be present. The effect of various drugs in controlling these emotional states and their chemical concomitants was then observed. One observation of tremendous importance is that, e.g. in resentment an amount of alcohol equal to that of 6 oz. of whisky (about 4 bar tots) completely abolished the enzyme in the alcoholic, and only modified the quantity in the non-alcoholic. With the disappearance of the chemical substance in the alcoholic there is a parallel disappearance, both subjective and objective, of the untoward emotional tone.

Thus a clear difference in response to alcohol in the alcohol addicted patient as compared to the norm was evident. The irresistible hypothesis that this very abnormal reaction to alcohol is an integral part of the psychodynamics of the alcoholic is suggested. Further points of difference are:

(a) The fact that in a large group of patients 1:1.8 gave a history of an alcoholic blood relative, where the figure in a control group was given as 1:10, suggests the presence of some constitutional tendency towards the manifestation of an abnormal response to alcohol.

(b) It is at that period of development when the subject is about to assume responsibility for himself and to society, and is asked to adjust to adult social institution, that he usually has his first contact with alcohol.

In all persons some adjustment of personality is required when the change-over from the sheltered adolescent environment is made to the interdependency of an adult society. In this change-over there are many situations which produce anxiety, tension and resentment. It is just the discomfort of these emotions which motivates the subject to modify those behaviour patterns and attitudes which may have been profitable during his formative years but are inadequate for adjustment to his new environment. The fortuitous discovery of a dramatic solvent of his discomfort, by the potential alcoholic, therefore removes motive for adjustment and indeed reinforces and fixates his inadequate personality traits. This would account for the oft made and no doubt accurate observation that the alcoholic is emotionally immature. Emotional development is arrested, due to the lack of experience gained by the adequate handling of frustrating situations. This leads to the occurrence of a low frustration resistance and a need for immediate gratification of his wants and an equally urgent

need for rapid release from discomfort. A conditioned reflex is quickly developed in the form of a spontaneous recourse to alcohol in response to stress-producing life situations. Constant repetitive behaviour on this basis causes a tremendous reinforcement of the conditioned response. It becomes obvious that therapy must be directed not only to breaking this conditioned reaction but also mainly at modifying underlying attitudes and behaviour patterns.

(c) In the pre-compulsive phase of alcoholism the hang-over phenomenon is not prominent. Patients report an ability to drink large quantities of alcohol without experiencing any untoward symptoms the following morning. About 80% of our patient group volunteer this information.

(d) 'Blackouts' similar in nature to cerebral anoxic incidents are experienced on occasion after the ingestion of comparatively small quantities of alcohol. Periods of automatic and seemingly normal behaviour, with only patchy recall later, develop on isolated occasions when alcohol is taken in quantities which would normally cause little disturbance in the subject. Some as yet unexplained disturbance of oxygen metabolism on a cerebral level in the alcohol-sensitive person appears to be responsible.

Five factors which presage the development of true alcohol addiction may be present in the person in whom a constitutional susceptibility to alcoholism is postulated. In summary these are:

1. Family history;
2. Undue tension-relief response to alcohol;
3. Rapid development of tolerance;
4. Alcoholic palimpsests or blackouts.
5. Lack of hangover.

That the subsequently developed compulsive phenomenon is in the nature of a true addiction is clear from the almost universal pattern of withdrawal symptoms presented. These symptoms bear a close relation to those produced by the withholding of other drugs in addicted persons. Strong presumptive evidence for physiological basis of these symptoms is demonstrated by the production of withdrawal symptoms on the injection of nalorphine (an antagonist to morphine) in a morphine-addicted subject who has taken the usual amount of his drug. Adaptive alteration of enzymology appears to develop in the addicted person and alcohol becomes necessary to maintain homeostasis and prevent disturbance in a patient who is currently drinking.

In a paper shortly to be published by us, a full battery of liver function tests, carried out in a group of chronic alcoholics is described.

Preliminary assessment of these biochemical tests indicate that in spite of grossly enlarged livers on clinical examination, very little functional impairment is shown on biochemical investigation.

The 'true' tests of liver function, viz. the bromsulphthalein dye retention test, cholinesterase, albumin, bilirubin and the ratio of cholesterol esters to total cholesterol, showed only minimal dysfunction in the acute-on-chronic patient, with a relatively rapid return to normal levels on subsequent analyses, after abstinence from alcohol. We were unable to confirm the finding of Voegtlin and his co-workers³ who, using the bromsulphthalein dye retention test found, depending on the degree of liver dysfunction, abnormal results in from 35% to 100% of their cases. In fact only one of our series showed an abnormal dye retention.

In a further paper now in preparation by us, an interesting but as yet unexplained phenomenon was observed. Mucoprotein estimations were carried out on admission of chronic alcoholics in relapse. High figures were invariably obtained. On withdrawing alcohol, an immediate further increase to levels in the vicinity of 200–300 mg. per 100 c.c. were recorded. Then followed a gradual return to normal levels but, on the administration of even relatively small amounts of alcohol an immediate rise to high mucoprotein levels was again observed. Mucoprotein is a glucoprotein complex, probably related to changes in the alpha globulins. These changes are not detected when electrophoretic analyses are carried out at an alkaline pH, but only when performed at an acid pH. The concentration of mucoprotein in the serum appears to represent the resultant of both intra- and extra-hepatic processes. Greenspan *et al.*⁴ found a reduced mucoprotein level in infectious hepatitis and portal cirrhosis; and a raised level in obstructive, inflammatory and neoplastic diseases of the biliary system. It is suggested by us that a diagnosis of alcoholism can be made on those patients who, not suffering from malignant disease or inflammatory conditions, show relatively normal liver function tests with a high serum mucoprotein level.

Biochemical and clinical evidence of cirrhosis of the liver was not a common finding in our alcoholic group. This fact is in keeping with the comment made by one of us that apparently only those patients whose livers are predisposed by other factors respond to the chemotoxic action of alcohol by the development of cirrhosis of the liver.

SUMMARY

1. There is an absolute interdependence between the psychological and physiological aspects of alcoholism.

2. This interdependence is implicit in the definition of an alcoholic, viz.:

(a) He is a person who takes alcohol initially to gain relief from what is to him an intolerable stress. This state of tension is developed by some faulty adjustment to life situations.

(b) After the ingestion of a certain amount of alcohol a true addictive process becomes operative and compulsive drinking develops.

(c) The tolerance to alcohol in the addict is a tissue tolerance and not a consumption tolerance.

3. Some Physiological Considerations.

(a) Alcohol is absorbed unchanged into the blood stream.

(b) The absorption rate is controlled by:

i. The state of the stomach contents;

ii. The rate of ingestion;

iii. The concentration of the ingested alcohol—optimum concentration between 10–20%;

iv. Action of drugs—sympathetic stimulants depress absorption rate;

v. Habituation factor: Absorption rate greater in habituated subjects.

(c) Optimum blood levels are reached in 1–2 hours, irrespective of the amount ingested. The break-down rate is constant ± 0.015 mg. per 100 c.c. per hour.

(d) Alcohol has a depressant action. It appears to have a selective cephalo-caudal action on the C.N.S. Frontal lobe activity is first affected; hence there is removal of inhibition, self-criticism and objective evaluation of environmental situations resulting in apparent stimulation.

(e) Tolerance to alcohol is greater in the break-down period than in the building-up period.

4. Pathological Factors.

(a) In the subject predisposed to the development of addiction, factors indicative of an early difference in response to alcohol are given, viz.:

1. Family history positive in 1:1.8 of the patient group;

2. Rapid development of tolerance;

3. Lack of hangover;

4. Undue tension relief as a response to alcohol;

5. Alcoholic palimpsest.

(b) The subsequently developed compulsive phenomenon is a true addiction with the universal pattern of withdrawal symptoms.

(c) The battery of liver function tests (including the brom-sulphaline dye retention test) indicate little impairment of liver function.

(d) Abnormal muco-protein estimations are reported, with a further rise on withdrawal, followed by a gradual return to normal levels.

(e) A diagnosis of alcoholism can often be made in patients who show relatively normal liver function tests and a high muco-protein level (provided other causes for this raised level can be excluded).

(f) Cirrhosis of the liver is probably only found in those patients predisposed by other factors to the chemotoxic action of alcohol.

OPSOMMING

1. Daar is 'n absolute onderlinge afhanklikheid tussen die fisiologiese en fisiologiese aspekte van alkoholisme.

2. Hierdie onderlinge afhanklikheid lê opgesluit in die omskrywing van 'n alkohol, nl.

(a) 'n Persoon wat aanvenklik alkohol begin neem om verligting te verkry van wat vir hom 'n ondraaglike spanning is. Hierdie spanningstoestand is die gevolg van sy gebrekkige aanpassing by lewenstoestand.

(b) Na die opneming van 'n sekere hoeveelheid alkohol tree 'n suiwer verslaafheidsproses in werking, en die gevolg is gedwonge drinkery.

(c) Die alkohol-toleransie van 'n dranksugtige is 'n weefseltoleransie en nie 'n verbruiktoleransie nie.

3. 'n Paar Fisiologiese Oorwegings.

(a) Alkohol word onveranderd in die bloedstroom opgeneem.

(b) Die absorpsiesyfer word gekontroleer deur:

i. Die toestand van die maaginhoud;

ii. Die opnemingsyfer;

iii. Die konsentrasie van die opgeneemde alkohol—optimum-konsentrasie tussen 10–20%.

iv. Die effek van medisyne—simpatisie versterkmiddels laat die absorpsiesyfer daal.

v. Die aanwenselfaktor—die absorpsiesyfer is groter by die gewoonte-drinker.

(c) Optimum-bloedpeile word bereik binne 1–2 uur, ongeag die hoeveelheid wat opgeneem word. Die afbrekingsyfer bly konstant—0.015 mg. per 100 ks. per uur.

(d) Alkohol het 'n terneerdrukkende effek. Dit skyn asof dit 'n kefalo-kaudale uitwerking op die C.N.S. het. Die aktiwiteit van die voorhoofskwab word skynbaar die eerste aangetas; gevolglik is daar die verdwyning van inhibisie, selfkritiek en objektiewe evaluasie van omgewingstoestande wat op skynbare stimulerende uitloop.

(e) Die toleransie vir alkohol is groter gedurende die afbrekingsyfer as gedurende die opbouyfer.

4. Patologiese Faktore.

(a) In die geval van die persoon wat tot die ontwikkeling van verslaaftheid gepredisponeer is, word die faktore wat indikatief van vroeë verskille in die reaksie op alkohol is, verstrekk, nl.:

1. Die familiegeskiedenis was positief in 1:1.8 van die pasiëntgroep;

2. Vinnige ontwikkeling van toleransie;

3. Geen teken van 'n dikkop-gevoel nie;

4. Oordrewe verligting van spanning as 'n reaksie op alkohol;

5. Alkoholiese palimpsest.

(b) Die later ontwikkelde dwangverskynsel is 'n suiwer verslaaftheid met die universele patroon van onttrekkingsimptome.

(c) Die battery van lewerfunksietoetses (insluitende die broomsulfalie-verfstofretensietoets) dui daarop dat daar min beskadiging van die lewerfunksie was.

(d) Abnormale slym-proteïen-berekenings word gerapporteer, met 'n verdere styging ná onttrekking, gevolg deur 'n geleidelike terugkeer na normale peile.

(e) 'n Diagnose van alkoholisme kan dikwels gedoen word by pasiënte wat betreklik normale lewerfunksies en 'n hoë slymvlies-proteïen peil openbaar (met dien verstande dat ander oorsake vir hierdie verhoogde peil uitgesluit kan word).

(f) Sirose van die lewer is waarskynlik aangetref slegs by dié pasiënte wat deur ander faktore vatbaar gemaak is vir die chemotoksiese effek van alkohol.

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II. THE MANAGEMENT OF ALCOHOLISM

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The alcoholic is an individual who has a neurotic type of behaviour pattern and who has also a physical idiosyncrasy to alcohol. This idiosyncrasy results from a change in his physical reaction to alcohol and causes such effects as a compulsion to take more alcohol, e.g. in the need for a 'regmaker'; or in 'black-outs', or in outbursts of uncontrolled behaviour. The whole pattern interferes progressively and irreversibly more and more with his

efficiency at work, his domestic life, and his health.

It is clear that there are two factors concerned in the management of alcoholism—the physical and the psychological. While the patient is still suffering from the physical effects of alcohol, he is not sufficiently accessible to psychological treatment, so the first concern must be the physical rehabilitation of the patient.

It is often in the very first contact with the patient that the ultimate success or failure of therapy may be decided.

The alcoholic, overwhelmed with guilt, self-condemnation and self-depreciation, *expects* criticism and rejection. He has had it so often before, from his relatives and from society as a whole. It is almost as if he *seeks* rejection—it confirms, somehow, his own assessment of himself. There is that satisfaction in it at least; and the alcoholic, from long practice, has little difficulty in provoking such rejection. Thus any impatience, any implied criticism, disapproval or contempt on the part of the therapist will reinforce this faulty behaviour pattern and, perhaps permanently, preclude the patient from fully accepting the therapist and his treatment. A condescending, patronizing manner is even worse.

The approach must be matter-of-fact, warm and consistent and there should be no talk, at first, of total and permanent sobriety. No alcoholic *wants* to stop drinking. Alcohol has buffered him from the discomfort of the tensions inherent in his makeup; and it is only when he has a thorough understanding of his problem that he is prepared to relinquish the familiar pattern of behaviour, no matter how unprofitable it has been, for a new one.

The right note can be struck at the outset, viz. treating the alcoholic as a physically (not morally) sick person; for that is just what he is. The excessive use of alcohol interferes with sleep, nutrition and metabolism. The alcoholic feels very sick indeed during a bout of drinking; and this discomfort is enormously enhanced by the accompanying psychological distress.

Treatment of the acute phase is seldom effective outside a nursing home or hospital. There, attention should first be paid to adequate sedation and nutrition. Intramuscular chlorpromazine with a barbiturate is almost always effective in producing sleep, although the accompanying tachycardia may be uncomfortable if much alcohol has already caused some tachycardia. The adverse effect on the liver appears to be minimal if the chlorpromazine is only used for two or three nights. Paraldehyde by mouth in large doses (4 drams or even more) is useful, either alone or instead of the barbiturate, with chlorpromazine. We prefer to 'taper off' the alcohol over a few days: the prospect of being without alcohol is terrifying to the alcoholic pulling out of a jag and tends to make him suspicious of the

therapist as yet another hostile authority, and so interferes with rapport.

The discomfort of the withdrawal phase may be eased by Tolseram, as also by large doses of vitamins, particularly B and C; and large quantities of fluids, glucose and sodium chloride. It is usually two or three days before he is able to eat normally again. A fat-free diet (with methionine) is advised for the first few days if there is much hepatomegaly. Epanutin, too, is advised for the first few days in view of the possibility of seizures.

It is *not* considered advisable to use barbiturates for day-time sedation. It is very easy for the alcoholic (the habit pattern of addiction already having been established) to become addicted to something else—and the barbiturates in particular are fraught with danger in this regard. Meprobamate is fairly useful in cutting down the tension of the first few weeks after a drinking bout, but caution must be used here too—not so much because of the danger of a chemical addiction, but because of the danger of the habit factor. If the tablet helps when the patient feels bad to-day, then he may as well take one to prevent himself from feeling bad to-morrow. In our experience the most dangerous substance from this point of view, often with severe physical side effects, is 2, 4-dioxo-3, 3-diethyl-5-methyl-piperidine—the more so because it is so readily obtainable.

As the patient begins to feel better, one can help considerably by sorting out such domestic, financial or work problems as may have arisen. At this time, too, one can start giving him some insight into his condition. This is best done in a group. The physical aspects of the problem are at first stressed. The condition is likened to other metabolic disturbances such as diabetes, and gradually the patient begins to lose his sense of guilt and unworthiness, as moral issues recede into the background and he begins to accept the fact that he is suffering from an illness which is a recognized entity and one which can, if properly handled, be controlled to a degree which no longer interferes with his life.

At this stage the relatives should be brought into the picture. No treatment of an alcoholic is complete without some education of his relatives. A wife who has been brought to the end of her tether by her bitter experiences with her alcoholic husband can hardly avoid becoming critical, nagging and suspicious—and this atmosphere of disapproval which surrounds the alcoholic is so often the trigger for

the tensions which cause the drinking. Once she understands more about his problem, the wife can become a useful ally in helping him to manage it. It is remarkable, indeed, how an alcoholic can be helped, even if he is unwilling at first to come for treatment, if his wife is given some understanding of the problem. He can often then be brought to the stage of himself wanting to come for treatment. Of course, it happens only too often that the husband flatly refuses even to see the doctor. One is reduced then to having to leave matters until his physical condition deteriorates to such a degree that he realizes that he *must* accept medical treatment. A correct approach at this time may persuade him to co-operate with long-term treatment. There is no doubt that enforced treatment is seldom effective, starting off as it does on the wrong foot.

Once the patient is over the physical side of his illness, is eating and sleeping better and is generally feeling more optimistic, one can continue with the psychological investigation and treatment of the problem. It is often useful at this stage for the patient to undergo various psychological tests of intelligence, personality and so on. This should not be done before he is in the right frame of mind, because the alcoholic is only too ready to find a reason for abandoning the whole project.

Before psychological treatment can be effective, it is necessary that there be some protection against further bouts of drinking interfering with therapy. This is not to say that one should focus too much attention on keeping the patient 'dry'. This is to treat the symptom rather than the cause; and, if that is the sole objective, therapy is bound to fail. The patient may use his drinking as a weapon against the therapist as a rejection- or attention-seeking device in the early phases of treatment, before he has gained full insight into his condition.

Nevertheless, it is necessary to keep alcohol out of the picture as far as possible, and this can be done in a fairly straightforward, matter-of-fact way, by the use of Antabus (tetraethylthiuram-disulfide). This substance reacts with alcohol in the patient's body and produces discomfort, so that he does not take more alcohol, i.e. does not take enough alcohol to set in motion the whole cycle of compulsive drinking, etc. It is of the utmost importance that the attitude to the taking of Antabus be correct. It will inevitably be harmful if Antabus is looked at as an implicit threat, a pistol

at the head, a 'sword of Damocles'. It must be put to the patient—and to his relatives—that the aim is one of *protection* (in the same way as quinine protects against malaria and insulin against diabetes), to keep alcohol out of the picture while the patient is learning a different pattern of reaction to stress. Antabus, in short, should be considered a *friend*, not an enemy; a crutch, as it were, to use while the patient is learning to walk properly again.

Antabus should be taken absolutely regularly and automatically, one tablet a day for at least 6 months. In that time, normal stresses will inevitably arise which, in the past, would have resulted in drinking. This is not possible on Antabus; and, with adequate psychological treatment, a different and more profitable pattern of reaction is developed.

Contra-indications to Antabus are few: severe cardiac or renal disease, etc. But it should be borne in mind that possible danger from Antabus may be a lesser evil than the certain danger of continued drinking. In the first few weeks of taking Antabus there may be some side effects (mild urticaria, frequency of micturition or a feeling of lethargy) but these are temporary and respond to a reduction in the dose. After a month or so a maintenance dose of half tablet daily is often adequate. Other possible side effects of the use of Antabus are impotence, constipation or a severe peripheral neuritis; the latter responds to massive doses of vitamin B₁₂. A rare complication is the development of a confusional state rather like that of delirium tremens, usually in cases with a previous history of a psychotic episode.

Antabus should not be given until 48 hours after the last drink for fear of precipitating the alcohol-Antabus reaction. It is absorbed slowly into the system and excreted even more slowly, so that Antabus may be taken daily for 3 months, then stopped—and 4 days later a drink may still produce a reaction. This is a fortunate protection against a sudden impulse to stop taking Antabus and start drinking. That is the whole point of taking Antabus—it gives the patient time to pause and consider the possible outcome before he starts to drink—a pause certainly not present when the pattern was one of immediate gratification of the need to seek relief from unbearable tension by the use of alcohol.

It is useful for patients on Antabus to undergo a 'test reaction', i.e. they are given a small amount of alcohol so as to experience the effects of the reaction—not only so that they

know what is happening should they impulsively or by chance take alcohol while on Antabus; but also so that they become aware of the presence of a *different* type of reaction to alcohol. Whereas, before, 'alcohol' meant 'more alcohol', now, 'alcohol' means 'stop'.

The knowledge that, while he is on Antabus, the alcoholic cannot have a bout of drinking, gives him a strong sense of security—and relieves, also, the disapproval, anxiety and mistrust of his wife and the others about him. This eliminates much of the tension which had previously been a potent factor in initiating his drinking.

Psychiatric Treatment of the Alcoholic. It is true that many alcoholics have done well without psychiatric treatment, just as many people are able to manage their own psychological problems—anxiety states, reactive depressions, and so on—on their own or with the help and understanding of their general practitioner, their priest or some understanding friend. But it must be recognized that the need in the alcoholic for relief of his tensions is a powerful one—so much so that when he takes that first drink he disregards the harm that will almost inevitably follow—the harm to his domestic situation, his work situation and his physical well-being—although his reason will tell him that this disruption is almost certain to follow his drinking, as it always has before; yet his need for emotional relief is so great that he disregards this and carries on with drinking, with the inevitable consequences. The underlying psychological disorder can therefore hardly be considered a minor one and, in our view, some sort of psychiatric treatment is almost always a necessary part of the rehabilitation of the alcoholic.

Considerable changes often have to be made in the day-by-day living pattern of the alcoholic during the course of his rehabilitation—new interests, hobbies, new friends, etc. It is here that a body like Alcoholics Anonymous can be of great value.

The general approach to the treatment of the alcoholic as outlined is, of course, very much easier if the patient is able to afford the various necessary and rather expensive services required. Unfortunately few alcoholics are in such a position and it is there that the greatest problem lies. Facilities for the treatment of the alcoholic, who is unable to pay, are woefully few. Some can be treated at certified retreats, e.g. Northlea, without cost; a few can be helped by privately run organizations, e.g. the Gables. Work colonies can be of

some help in the problem, if only by giving the families of the alcoholics some relief; but there is little real therapy there. It is hoped that Provincial hospitals may, in time, provide beds for at least the medical treatment of the alcoholic during the acute phase of his illness, but their other commitments are extensive; it must also be said that it is not everywhere recognized that an alcoholic is as genuinely in need of medical attention as is a man with an ulcer or pneumonia, so that one cannot hope for much relief from that quarter in the near future.

What is needed is a series of small units, adequately subsidized by State and Provincial authorities, where the alcoholic can receive appropriate medical treatment for a few weeks. Many require longer institutional treatment while undergoing rehabilitation. To plunge them back into the environment which initiated their intolerable stresses, would be to court disaster, so that hostels of some kind are essential; and some could well stay at home (once their physical condition has improved) and receive treatment on an out-patient basis, such as that envisaged by the Rand Therapeutic Centre. For those who are, for some reason or other, unable to benefit from therapy sufficiently to be able to take their normal place in society, the present type of Work Colony would perhaps suffice. At least, society in general and the families in particular, could be relieved of the impact of their condition.

But none of this treatment can be considered fully effective unless society as a whole is adequately educated in the understanding of the problem. The present condemnatory and disapproving attitude is such a potent force in producing and perpetuating the tensions in the alcoholic which initiate his drinking that, without some change in this regard, one cannot hope for much over-all improvement in the situation. It is for this reason (as well as for their particular help to alcoholics and their relatives) that the development of Information Centres all over the country is so necessary, as is public and medical support of such an organization as SANCA, which has, as one of its chief aims, the education of the public in regard to alcoholism.

It is not outside the bounds of probability that alcoholism, like smallpox, is a condition which might well be eradicated with sufficiently wide inoculation of the real understanding of the problem. The vicious cycle of drinking-criticism-tension-more drinking

could thus be broken. With increasing knowledge of mental hygiene, parent-child relationships would improve and the patterns of insecurity, fundamental in alcoholism, would become less frequent.

In the meantime we must continue as best we can, holding to the tenets that the alcoholic is a sick person; that he *can* be helped; and that to help him is our obligation to society and to our patients.

III. THE ALCOHOLIC PSYCHOLOGICAL ASPECTS

H. E. VAN HOEPEN, B.Sc. (ARTS) (HOLLAND), M.D.

Johannesburg

Each person has his own individual psychological structure which distinguishes him from his fellow-beings. From a psychiatrist's point of view each person, therefore, has to be dealt with as a separate entity, different from the rest. This applies to alcoholics as much as to other groups of people.

There is, however, no doubt that those with a similar make-up tend to gravitate to similar groups in life, and we see good examples of this in the miners, the police, the medical profession, etc. Once in such a group, people find similar conditions of life and similar problems with similar solutions. They therefore develop similar characteristics, and eventually one may speak of common characteristics of a group. In each one of us these characteristics are conjured together to form a picture which we call the 'typical personality'. Thus we have a concept of a typical doctor, a typical miner and a typical policeman. Experience teaches us, though, that no one really conforms to this typical picture. On first confrontation we may readily label someone as a typical miner, etc. but as we get to know him better, the differences become apparent, and we may even express surprise that he is a miner!

The same applies to that vague group of persons we term alcoholics. They are grouped together because they have an abnormal reaction to alcohol. Once they have this reaction, they usually encounter similar problems and similar situations—they develop traits in common with their fellows. If they become chronic alcoholics, the damage done to their nervous system (which is usually similar in different individuals) will tend to make them even more

OPSOMMING

'n Alkoholis het 'n neurotiese tipe gedrags-gewoonte, asook 'n fisiese allergie teen die skeikundige stof, alkohol.

Die geneesheer se benadering moet altyd eengalig en nooit beoordeelend of afstootlik wees nie.

Eerstens moet die liggaamlike nagevolge van drank behandel word, en daarna het die pasiënt hulp nodig in verband met die beheer van sy psigologiese, huislike en maatskaplike probleme.

Gedurende rehabilitasie kan hy beskerm word teen die verdere gebruik van alkohol deur middel van Antabus.

similar in psychological make-up. The chronic alcoholic or the deteriorated alcoholic will therefore conform more to 'type' than the beginning alcoholic or the pre-alcoholic.

The personality of the chronic alcoholic is fairly well known. I will therefore limit myself to observations on the pre-alcoholic and some of the problems of the non-deteriorated alcoholic.

As has been shown, it is to be expected that the personalities of pre-alcoholics differ widely from one another. This makes it difficult to select those characteristics which have led the person in the direction of alcoholism. Besides, we only know the pre-alcoholic after he has already developed alcoholism. By that time his personality has already undergone change and a true assessment of his pre-alcoholic traits becomes very difficult. Each investigator will have to be satisfied with a personal impression.

A factor in many alcoholics that struck me as important is the great sensitivity they have for painful stimuli. A physical pain, a setback, an insult or a loss seems to hurt them much more than it does the average person. They suffer more intensely and longer and have much more difficulty in adjusting to these things than their friends. This sensitivity usually manifests itself at an early age, often increasing with time. It is not known whether this is a purely psychological phenomenon or whether it has an organic background. It is to be expected that such a sensitivity will call for sedatives sooner or later. It certainly contributes to the tension under which alcoholics labour.

Another feature is the inability of most

alcoholics to make adequate interpersonal relationships. Their ties with people are often too strong or too superficial. On the one hand, they may be too strongly attached to their parents; on the other hand they have numerous superficial acquaintances but few friends. Apparently they are not able to love another person in such a way that the love itself becomes a reward.

Closely linked with this is the egocentricity, the inability to understand and feel the needs of another person, which one often encounters. This trend makes it impossible to meet the other person more than half-way, thereby causing so many failures in interpersonal relationships. Deeper analysis of these last two trends often proves them to be based on early rejection or incomplete acceptance by the parents of the alcoholic.

A feature of alcoholics dating back into the pre-alcoholic stage is their lack of rewarding interests in life. They have few hobbies, few interests in arts or sciences, little interest in other beings. Here also they have failed to abstract themselves and to step outside of themselves. I have paid a lot of attention to this aspect over the past few years because I thought it of importance. There is a delicate balance in life between the reward we get from life and the effort we put into life. As soon as the effort outweighs the reward, we say: 'Life is not worth living'. Alcohol affects this balance in that it temporarily dulls the ache of effort, and at the same time increases the reward by feelings of pleasure. By taking away the alcohol we disturb this equilibrium and we often see that the alcoholic becomes depressed, finds life extremely hard and usually not worth living. Naturally one will look for other rewards which can restore the balance, and in this respect hobbies and interests play an important role. I have learned that the only way to develop a hobby in someone is to make friends with him and let him share in your own hobby. At first he will do this because of the friendship he feels for you, and he will show curiosity in what you do. Gradually this curiosity will develop into an interest which will eventually gain independence. This is also the way in which we develop interests as a child—at first for the sake of the company of our parents or the person we love, later for its own sake. The child who has not had that company of his father or mother, who feels rejected at an early age, does not develop these interests.

Finally it seems that most alcoholics are poorly integrated personalities. They have great

difficulty in making ends meet in their own make-up, and if they do achieve a balance it is delicate and easily disturbed. One has often witnessed this in the successful sportsman who, as long as he can assert himself in his sport, will seem a well balanced person who can control his drinking. Once he gives up his sport, through his age, his work or his marriage, he soon becomes an alcoholic.

There are a few characteristics of the established alcoholic which make his treatment very difficult if they are not understood.

Guilt Feelings. The alcoholic feels that he has made a mess of things by his inability to control his drinking. He does not understand that this is due to his sickness—that he was labouring under a poisoned mind and that he is fighting an allergy. He blames it on himself and he thinks of himself as a failure, as a weakling who cannot control his drives. He suffers from these guilt feelings which make his life miserable. His friends do not understand this, and think that he is a man without a conscience. Therefore they will arouse his conscience by bringing his misdeeds to his notice! This is heaping coals on his already burning mind, increasing his tension to the intolerable and driving him to the bliss of further sedation. Convincing him of the fact that he is the victim of a disease, that he has been poisoned and that his behaviour can be blamed on that fact, will tend to restore his self-respect, ease his conscience and give him the chance to do something about it.

Inferiority. Most alcoholics have this feeling. They criticize themselves severely, think that they are not as good as the next man because they cannot stand their drink as well, or feel inadequate because they cannot control themselves. Any attitude, in those surrounding them, which they can interpret as being looked down upon, will hurt them severely, the more so as they are so sensitive. This therefore increases their problems instead of helping them. Moreover, it tends to make them avoid the person who wants to help them, isolates them still further, and increases their defences against hurt which they show by their aggression. Convincing them of the fact that an allergy to alcohol, not very different in principle from an allergy to pollen, feathers or eggs, puts the picture in better perspective and removes the moral implications of a sensitivity to alcohol, and so removes much of the self-criticism and self-depreciation which is such a marked feature of the alcoholic.

OPSOMMING

Die skrywer bespreek die psigologiese aspekte van die probleme van die alkoholis.

Hy lê klem op die voor-alkoholiese persoonlikheid en die onvermoë van die meeste alkoholiste om, onder meer, doeltreffende tussenpersoonlike verwantskappe aan te knoop.

Die skuldbesef en die minderwaardigheidsgevoel waaraan die meeste alkoholiste ly, vermeerder die moeilikhede wat aan die probleem verbonde is.

Deur die alkoholis te oortuig dat 'n allergie vir alkohol nie veel verskil van 'n allergie vir stuifmeel, veertjies of eiers nie, is dit moontlik om veel van die self-minagting te verwyder en aldus die behandeling en rehabilitasie te vergemaklik.

IV. THE TREATMENT OF INSOMNIA IN ALCOHOLICS DURING AMBULANT THERAPY AND REHABILITATION

BORIS SEREBRO, M.B., B.Ch. (T. C. D.)

The Conservation of Man-Power Unit, Johannesburg

A *Conservation of Man-Power Unit* has been formed to combat the chronic shortage of man power. Its aim is to minimize man-power loss through alcoholism in industry, administration and commerce.

The early return of the alcoholic (after an acute episode of intoxication) to his normal environment, viz. his work and home, is thus a primary objective of the Conservation of Man-Power Unit.¹

In contrast to the various institutional approaches used in the rehabilitation of the alcoholic patient, this Unit deals mainly with the patient on an ambulant level, and all therapy takes place while the patient is working. He comes in daily for treatment during working hours. This is done with the prior consent and approval of the patient's employer and has the support of the patient's trade union organization.

Work is essential for this rehabilitation which, at the same time, keeps him in close contact with his fellow workers as a group. In this type of situation the patient receives the benefit of group discipline as well as the added advantage of group protection.² Work is necessary for the patient's economic welfare and morale, and is in itself psychotherapeutic.

All therapy and medication that the patient receives daily is under constant supervision. This includes the handing out of various pharmaceutical preparations which are taken by the patients during their daily visit to the Unit. Such preparations are disulfiram and similar substances, as well as supportive medicaments, which may be given orally or by injection. Hypnotics are handed to the patient in sufficient quantity, with instructions that they be taken at bed-time, to last for one night only. This acts as a control over possible habituation^{3,4} and prevents accidental overdosage. Furthermore, this supervision and daily attendance lends itself to better management of

therapy, so that response to treatment can be noted and dosages of the various medicaments regulated on the basis of clinical evaluation.

A major complaint by patients during the early weeks of therapy, when withdrawal symptoms are apparent, is troublesome insomnia. This insomnia produces fatigue and lessens the industrial efficiency of the alcohol-addicted worker undergoing rehabilitation. To counter this insomnia, we have used various forms of hypnotics, including paraldehyde. Although the latter is useful while a patient is confined to his home or hospital, it has the disadvantage of a lingering odour which is not well tolerated by the patient's fellow workers. The frequent exhalation of paraldehyde tends to pinpoint the alcoholic worker, and enhances existing inadequacies in an already inadequate personality. Simple barbiturates in effective doses have the disadvantage of producing a sedation that is too prolonged, and patients complained of feeling 'dopey' during the day when the demands of their work and responsibilities require that they be fully alert.

In the ambulant approach by the Unit such post-hypnotic barbiturate effects are undesirable, particularly in those alcoholics who are doing responsible work, e.g. driving public passenger or heavy freight vehicles, or who are in charge of high voltage switch-gear, or who perform other equally hazardous duties. Such effects are likewise undesirable in those workers who are in contact with the public at all times, as well as those patients who fall into the technical and clerical categories and whose work is similarly of a responsible nature.

We have as a result used a compound barbiturate tablet in those alcoholics who are suffering from withdrawal symptoms associated with intractable insomnia. Each tablet contains:

Dihydroergotamine methanesulphate	0.48 mg.
Scopolamine hydrochloride	0.24 mg.
Sodium barbitone	135 mg.

Sodium phenobarbitone 45 mg.
Sodium allylisobutylbarbitone 75 mg.

The tablets are marketed as Plexonal Forte (Sandoz). These are 3 times as strong as Plexonal (ordinary strength) and should not be confused with this latter weaker compound. The dosage of Plexonal Forte varies from 1-2 tablets at bed-time depending on the severity of the withdrawal symptoms and the associated insomnia.

During the daily visit to the Unit the patient is given the appropriate dose of Plexonal Forte for the insomnia until such time as there is an overall improvement. Thereafter, the dose is reduced to one tablet on alternate nights, and eventually this therapy is tailed off. We have found it necessary to relieve insomnia for periods varying from 10 days to 6 weeks, depending largely on the severity of the case and the response to this and concomitant therapy.

In all, 250 unselected cases were treated with Plexonal Forte by the Unit. The results were gratifying as judged by the subjective reports of the patients themselves, as well as by the observed improvement in the general demeanour and well-being of the patients. Reports by employers of maintained efficiency by alcohol-addicted employees, together with reduced sickness absenteeism, and an increase in the workers' fatigue threshold, are factors of mutual benefit to the patients and to the industry that they serve. In addition, relief from insomnia stabilizes the patients at an early stage in their rehabilitation and prepares them for psychotherapy.

Other supportive measures during the treatment of insomnia by Plexonal Forte are not contraindicated; in fact, other forms of therapy are complementary. In this series of cases, we did not encounter any untoward reactions such as gastrointestinal disturbances or allergic skin reactions.

SUMMARY

The Conservation of Man-Power Unit is concerned with the problem of alcoholism and approaches this problem on an out-patient basis.

The patient comes daily to the Unit for his treatment as part and parcel of his rehabilitation.

All treatment is given under constant medical supervision, and hypnotics are likewise handed to the patient in sufficient quantity for one night only, in order to prevent habituation and overdosage, and to make for better control of therapy generally.

A major complaint during the early weeks of therapy is insomnia, which produces fatigue.

Most hypnotics, including simple barbiturates, are unsuitable because, if given in effective doses, they produce a drugged feeling in patients. This is undesirable in those who do responsible or hazardous work.

We have used Plexonal Forte with gratifying results in a dose of 1-2 tablets per night, the dose depending on the severity of the withdrawal symptoms and the associated insomnia.

Two hundred and fifty unselected cases were appraised on the basis of subjective reports of patients, on observed progress as well as on reports by employers of maintained efficiency and reduced sickness absenteeism. There is an increase in the workers' fatigue threshold, as well as an early stabilization of the patients in preparation for psychotherapy.

OPSOMMING

Die eenheid vir die Konservasie van Werkkragte is ten nouste verbonde aan die probleem van alkoholisme, en benader hierdie probleem op die buitepasient-basis.

Die pasiënt kom daglik na die Eenheid vir die behandeling wat 'n onafskiedbare deel van sy rehabilitasie uitmaak.

Alle behandeling geskied onder gedurige mediese toetsing, en slaapmiddels wat slegs voldoende vir 'n enkele nag se gebruik is, word aan die pasiënt gegee om gewoontevorming en té groot dosisse te voorkom en om makliker beheer oor die terapie in die algemeen in die hand te werk.

'n Belangrike klagte tydens die vroeë weke van behandeling is slaaploosheid wat uitputting tot gevolg het. Die meeste slaapmiddels, insluitende die barbiturate, is ongeskik want, as hulle in voldoende hoeveelhede toegedien word, gee hulle die pasiënt 'n gevoel van bedwelming. Dit is onwenslik by persone wat verantwoordelike of gevaarlike werk moet doen.

Ons het Plexonal Forte met bevredigende resultate gebruik in dosisse van 1-2 tablette per aand. Die grootte van die dosis hang af van die erns van die onttrekkingsimptome en die slaaploosheid wat daarmee gepaard gaan.

Tweehonderd-en-veertig gevalle wat nie spesiaal uitgesoek is nie, is geëvalueer op grondslag van die subjektiewe rapporte van pasiënte, aan die hand van die waargenome vordering, en op die basis van die verslae oor volgehoue doeltreffendheid en verminderde afwesigheid ten gevolge van siekte wat deur werkgewers ingedien is. Daar is 'n vermeerdering van die uitputtingsdrempel by werkers, sowel as 'n vroeë stabilisasie van die pasiënte wat vir psigoterapie voorberei word.

We acknowledge gratefully the co-operation given and the interest shown in the Conservation of Man-Power Unit by Dr. Paul Stein of Sandoz Limited, who made supplies of Plexonal Forte available to us.

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NOTES AND NEWS • BERIGTE

MAYBAKER (S.A.) (PTY.) LTD.: SERVICE DURING THE COMING HOLIDAYS

Maybaker (S.A.) (Pty.) Ltd. announce that their Port Elizabeth warehouse and factory will be closed from 16 December 1957 to 5 January 1958. The Johannesburg depot will close for the same period.

Practitioners will find it to their advantage to increase orders for delivery during November.

During the holiday period the usual supplies can be obtained from wholesalers. Urgent orders will be executed by an emergency service at Port Elizabeth.

NUTRITION SOCIETY OF GREAT BRITAIN

The Scottish Group of the Nutrition Society will hold an Open Scientific Meeting in Glasgow University on Saturday, 8 February 1958, for the presentation of original papers and demonstrations by members and others introduced by them.

The Nutrition Society will hold a symposium in Liverpool on *World Supplies of Fish* on Friday and Saturday, 28 and 29 March 1958.

Mr. H. E. Lewy (who has been connected with the medical and surgical trade in Cape Town for the last 20 years) is now acting as Agent for Medical Distributors (Pty.) Ltd., of Johannesburg. His office and showroom is at 216—217 Boston House, Strand Street, and his telephone number is 3-4608 (*Telegraphic Address: MEDLEW*). Mr. Lewy will be pleased to welcome old and new friends at this address.

Mnr. H. E. Lewy (wie vir die afgelope 20 jaar verbonde is aan die mediese en chirurgiese handel in Kaapstad) sal voortaan optree as Agent vir Medical

Distributors (Eiens.) Bpk., van Johannesburg. Sy kantoor en vertoonlokaal is te Bostonhuis 216—217, Strandstraat en die telefoon nommer is 3-4608 (*Telegrafiese Adres: MEDLEW*). Mnr. Lewy sal met genoeë ou en nuwe vriende hier verwelkom.

Dr. A. Berezowski, M.B., B.Ch. (Rand), D.M.R.D., R.C.P. & S. (Eng.), formerly radiologist to Baragwanath Hospital, has joined Drs. S. Samuel, C. Komins and M. Denny in consultant radiological practice at 1 Lister Building, Jeppe Street, Johannesburg, in place of Dr. Leon Morris, who has left for overseas. (Telephones:—Home: 42-9684; Rooms: 23-5931).

Dr. A. Berezowski, M.B., B.Ch. (Rand), D.M.R.D., R.C.P. & S. (Eng.), voorteen van die Departement Radiologie, Baragwanath Hospitaal, het nou by drs. E. Samuel, C. Komins en M. Denny aangesluit in hulle radiologiese praktyk te Listergebou 1, Jeppestraat, Johannesburg, in plek van dr. L. Morris wie tans oorsee vertrek het. (Telefoon:—Huis: 42-9684; Kamers: 23-5931).

Dr. Louis F. Freed, M.A., M.D., D.Phil., D.P.M., F.R.S.S.A., author of *The Problem of European Prostitution in Johannesburg*, and of the chapter on *Crime in Social Medicine*, edited by Prof. E. H. Cluver, was recently received in audience by the Hon. Mr. C. R. Swart, Minister of Justice. Dr. Freed was subsequently received by Prof. Dr. Rudert, Head of the Department of Psychology in the University of Heidelberg, Germany, who has been on a holiday visit to the Union.

PREPARATE EN TOESTELLE

CATHOPEN

Cathopen is novobiosien en penisillien, en bied u 'n buitengewoon kragtige bakterievernietigende samestelling vir die behandeling van die mees algemene infeksies in u alledaagse praktyk waar dit dikwels moeilik en soms onmoontlik is om die patogeen te identifiseer voordat doeltreffende terapie ingestel word. *Cathopen* bied u 'n breë spektrum van bakteriebestrydende bedrywigheid. Dit het 'n volle bakterievernietigende effek, dit word goed verdra en dit is ekonomies.

Klinies is novobiosien die nuttigste en doeltreffendste anti-stafilokokki-middel wat op die oomblik verkrygbaar is. Penisillien is nog steeds die verkieslike antibiotikum vir die sistemiese behandeling van infeksies veroorsaak deur beta-hemolitiese streptokokki (Lancefield se Groep A), pneumokokki, meningokokki, gonokokki, die spirochete, Clostridium perfringens en actinomyces.¹

Klinies is daar aangetoon dat 72% van alle bakteriese infeksies wat in gematigde streke voorkom,

op die allerdoeltreffendste wys: met penisillien behandel kan word, slegs 7.4% met die sogenaamde, 'breë-spektrum-antibiotica', en die oorblywendes met sulfonamiede, streptomisien en ander bakteriebestrydende middels.²

Die gesamentlike gebruik van hierdie twee antibiotica bied u dus 'n breër antibakteriese spektrum, en voorkom die vinnige verskyning van weerstandskragtige soorte—veral stafilokokki en streptokokki.

Cathopen word aangedui vir die behandeling van mangelontsteking, keelontsteking, pneumonie, otitis media, seerkeel wat deur streptokokki veroorsaak word, sinusontsteking, die angina van Vincent, korintebaard, karbonkels en bloedvinte, longswere, brongitis, beenmurgontsteking, buikvliesontsteking, ontstekingskwale in die bekken, skarlakenkoors, roos, mastitis en talle ander gewone infeksies.

Dosis: Volwassenes: 2 kapsules 4 maal per dag op 'n leë maag.

Kinders: 1 kapsule per dag vir iedere 12 pond gewig, verdeel in 4 dosisse.

Hoe dit verskaf word: Cathopen-kapsules in bottels van 16 kapsules. Iedere kapsule bevat 125 mg. novobiosien en 125,000 eenhede natriumpenisillien.

Verwysings: 1. New and Non-Official Remedies, A.M.A. (1957): bl. 102-4.

2. Krantz, J. C., Jr. (1954): Vergadering van die Mediese Vereniging van Pennsylvania, 20 Oktober.

Fabrikant: Merck Sharp & Dohme International, 'n Afdeling van Merck & Co. Inc.

Navaas: Posbus 5933, Johannesburg.

PROPONESIN

'N PYNVERDOWINGSMIDDEL WAT VINNIG IN WERKING TREE

'n Nuwe sintetiese pynverdowningsmiddel, ontdek in die navorsingslaboratoriums van British Drug Houses, word deur B.D.H. aangekondig en onder die handelsnaam *Proponesin* beskikbaar gestel. Die nuwe stof is tolpronienhidrochloried en is verkrygbaar in tablette wat 100 mg. bevat.

Ten gevolge van kliniese ondersoek en vergelyking met ander pynverdowningsmiddels in 38 sentrums dwarsdeur die Verenigde Koninkryk, is die volgende drie hoofvoordele van *Proponesin* geëvalueer:



1. Daar is bevind dat dit merkwaardig vinnig in werking tree.

2. Geen kontra-indikasie is waargeneem en geen hardlygheids- of ander newe-effekte is ondervind nie.

3. Dit het bewys dat dit van besonder groot waarde is vir pasiënte wat nie asperienpreparate kan verdra nie of wat geen reaksie op ander pynverdowningsmiddels toon nie.

Proponesin-tablette is van groot waarde vir die verligting van die pyn voortspruitende uit hoofpyn, dismenorree, sinusontsteking, tandpyn en herpes zoster. In die vroeë stadiums van gevalle waar die pyn geleidelik erger word, het dit ook die noodsaaklikheid om kragtiger pynverdowningsmiddels soos morfin en petidien te gebruik, uitgestel.

Die aanbevole dosisskema is een of twee *Proponesin*-tablette drie of vier maal per dag. Die tablette moet heel ingesluk en nie fyngedruk of in die mond opgelos word nie.

Proponesin is verkrygbaar in bottels van 10, 50 en 250 tablette, elk bevattende 100 mg. tolpronienhidrochloried.

NATABEC KAPSEALS

Parke, Davis Laboratories (Pty.) Ltd. kondig die beskikbaarstelling aan van *Natabec Kapseals*, 'n nuwe vitamien-mineraal-toevoegsel vir swanger vrouens en sogende moeders.

Beskriving: Die doel van goeie verloskundige behandeling, vanaf die vroeë stadiums van swangerskap tot ná die melkafskeidingstydperk, is om die gesondheid van sowel moeder as kind te verbeter. Noodsaaklike voedingstowwe maak nie altyd deel van die dieet uit nie, en *Natabec* bevat dus vitamien- en minerale wat sorgvuldig gekies is om aan die behoeftes van 'n vrou tydens swangerskap en die melkafskeidingstydperk te voldoen.

In teenstelling met baie van die ander vitamien-mineraaltoevoegsels is een van die opvallendste kenmerke van *Natabec* die insluiting van kalsiumkarbonaat liever as een van die kalsiumfosfate. In *Obstetrics and Gynecology*, 1:94, 1953, verklaar drs. Page en Page dat spierkrampe dikwels by swanger vrouens voorkom, en hulle skryf dit toe aan die hoë peil van fosfor in die dieet. Hierdie krampe kan in 'n baie groot mate of voorkom of verlig word deur die hoeveelheid fosfor in die dieet te verminder, en deur kalsiumsoute, vry van fosfor, te gebruik.

Dosis en Toediening: Een of meer Kapseals per dag.

Iedere Kapseal bevat:

Kalsiumkarbonaat	600 mg.
Ferriusulfaat	150 mg.
Vitamien B ₁₂ (Kristallien)	2 mcg.
Intrinsieke Faktor-konsentraat	5 mg.
Foliensuur	1 mg.
Sinkamien (Vitamien K ₃)	0.5 mg.
Rutien	10 mg.
Vitamien A	4,000 eenhede
Vitamien D	400 eenhede
Vitamien B ₆ Mononitraat	3 mg.
Vitamien B ₂ (Riboflavin)	2 mg.
Vitamien B ₁₂ (Piridoksienhidrochloried)	1 mg.
Nikotinamied	10 mg.
Vitamien C (Askorsiensuur)	50 mg.

Inligting oor Verpakking: Bottels van 25 Kapseals.

ALPA ALNEA, DIE 35 MM.-ENKELENS-REFLEKSKAMERA

Parallaks-vrye, 'deur-die-lens'-instelling, verenig met 'n presisie-geslypte prisma en matglas met 'n be-



Fig. 1. Kamera vasgeheg aan bronkoskoop.

sonder fyn grein, maak die *Alpa Alnea* die ideale kamera nie alleen vir algemene fotografie nie, maar

ook vir spesiale toepassings in die geneeskunde. Die enkellens-refleksstelsel van die *Alpa Alnea* met sy buitengewone heldere en skerp beeld van 'lewens-grootte' maak vergroting 'n besonder maklike taak —sonder die noodsaaklikheid om ingewikkelde en duur refleksomhulsels, skuiftoestelle en ander 'ekstras' te gebruik.

Die logiese gesigshoek van 45° van die *Alpa Alnea* maak dit moontlik om die kop in die natuurlikste posisie vir absoluut gerieflike werk te hou, veral as die kamera op 'n vlakby-opname-staander-tjie of 'n mikroskoop gemonteer is. Dit is ook die ideale instellingstoestel vir diegene wat 'n bril dra.

Die enigste apparaat wat vir fotomikrografie nodig is, is 'n aansluiterring wat op enige standaard-mikroskoop pas.

'n Verskeidenheid van verwisselbare lense vanaf 28 mm. tot 3,750 mm. is beskikbaar, en pas op enigiens van die *Alpa Alnea*-reeks kameras.

Van spesiale belang is die nuwe makro-kilar-lens van 1.8/40 mm. met 'n vooraf gestelde diafragma wat van infiniteit tot 4" ingestel kan word.

Die *Alpa Alnea* het die mees revolusionêre ontwerp van al die miniatuurkameras in die 35 mm.-klas, en is gevolglik ideaal geskik vir lede van die mediese professie wat standaard-, wetenskaplike, makro-, mikro- en endoskopiese afnemerswerk wil doen.

Navrae: Westdene Products (Pty.) Ltd., Essanby-gebou 23, Jeppestraat 175, Johannesburg (en takke).

PREPARATIONS AND APPLIANCES

CATHOPEN

Cathopen is novobiocin and penicillin and offers an unusually potent bactericidal combination for use in the treatment of infections which occur most commonly in everyday practice, where it is frequently difficult, if not impossible, to identify the pathogen before instituting adequate therapy. *Cathopen* provides a broad spectrum of antibacterial activity, is fully bactericidal, well tolerated and economical.

Clinically novobiocin is the most useful and effective anti-staphylococcal agent available at the present time. Penicillin is still the antibiotic of choice for the systemic treatment of infections produced by beta haemolytic streptococci (Lancefield's Group A), pneumococci, meningococci, gonococci, the spirochaetes, *Clostridium perfringens* and actinomycetes.¹

Clinically it has been shown that 72% of all bacterial infections found in the temperate zones can be treated most effectively with penicillin, only 7.4% by the so-called 'broad-spectrum antibiotics', and the remaining ones by sulphonamides, streptomycin or other antibacterial agents.²

The joint use of these two antibiotics provides a broader antibacterial spectrum and prevents the rapid emergence of resistant strains—particularly staphylococci and streptococci.

Cathopen is indicated in the treatment of tonsillitis, pharyngitis, pneumonia, otitis media, streptococcal sore throat, sinusitis, Vincent's angina, impetigo, carbuncles and furunculosis, lung abscess, bronchitis, osteomyelitis, peritonitis, pelvic inflammatory disease, scarlet fever, erysipelas, mastitis and many other day-to-day infections.

Dosage. Adults: 2 capsules 4 times daily on an empty stomach

Children: 1 capsule daily for each 12 lb. weight divided into 4 doses.

How Supplied: *Cathopen* Capsules in bottles of 16 capsules each capsule containing 125 mg. novobiocin and 125,000 units of potassium penicillin.

References. 1. New and Non-Official Remedies A.M.A. (1957): pp. 102-4.

2. Krantz, J. C., Jr. (1954): Meeting of the Medical Society of Pennsylvania, 20 October.

Manufacturer: Merck Sharp & Dohme International, Division of Merck & Co. Inc.

Enquiries: P.O. Box 5933, Johannesburg.

PROPONESIN

ANALGESIC WITH RAPID ONSET OF ACTION

British Drug Houses announce the introduction of a new synthetic analgesic discovered in the B.D.H. Research Laboratories under the trade name *Proponesin*. The new substance is Tolpronine Hydrochloride and it is issued in tablets containing 100 mg.

As a result of clinical investigation and comparison with other analgesics in 38 centres throughout the United Kingdom, the following

3 main advantages of *Proponesin* were evaluated:

1. It was found to have a remarkably rapid action.

2. No contra-indications were observed and no constipating or other side effects were experienced.

3. It proved invaluable for patients intolerant to aspirin preparations

or showing no response to other analgesics.

Proponesin Tablets are of outstanding value in relieving pain due to headache, dysmenorrhoea, sinusitis, toothache and herpes zoster. It has also postponed the need for more powerful analgesics such as morphine or pethidine, in the early stages of cases with progressively severe pain.

The suggested dosage scheme is one or two tablets of *Proponesin* prescribed 3 or 4 times daily. Each tablet should be swallowed whole and not held in the mouth or crushed.

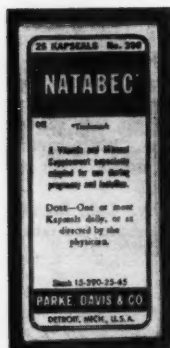
Proponesin is available in bottles of 10, 50 and 250 tablets, each containing 100 mg. Tolpronine Hydrochloride.

NATABEC KAPSEALS

Parke, Davis Laboratories (Pty.) Ltd. announce the introduction of *Natabec Kapseals*, a new vitamin-mineral supplement for pregnant and lactating women.



Description: The aim of good obstetric care, from early pregnancy through lactation, is to provide better health for the mother and child. Nutritional essentials are not always included in the daily diet and *Natabec* contains vitamins and minerals carefully selected to meet the requirements of pregnancy and lactation.



In contradistinction to many other vitamin-mineral supplements, an outstanding feature of *Natabec* is the inclusion of calcium carbonate in preference to one of the calcium phosphates. Drs. Page and Page in *Obstetrics and Gynecology* 1:94, 1953 reported that muscle cramps often occur in obstetric patients and

attributed this to a high level of phosphorus in the diet. These can be either prevented or relieved to a significant degree by reducing the amount of phosphorus in the diet and by the use of calcium salts free of phosphorus.

Dosage and Administration: One or more Kapsels daily.

Each Kapsel of *Natabec* contains:

Calcium Carbonate	600 mg.
Ferrous Sulphate	150 mg.
Vitamin B ₁₂ (Crystalline)	2 mcg.
Intrinsic Factor Concentrate	5 mg.
Folic Acid	1 mg.
Synkamin (Vitamin K ₃)	0.5 mg.
Rutin	10 mg.
Vitamin A	4,000 units
Vitamin D	400 units
Vitamin B ₁ Mononitrate	3 mg.
Vitamin B ₂ (Riboflavin)	2 mg.
Vitamin B ₆ (Pyridoxine hydrochloride)	1 mg.
Nicotinamide	10 mg.
Vitamin C (Ascorbic Acid)	50 mg.

Package Information: Bottles of 25 Kapsels.

ALPHA ALNEA 35 MM. SINGLE LENS REFLEX CAMERA

Parallax-free, 'through-the-lens' focusing, combined with a precision-ground prism and an extremely

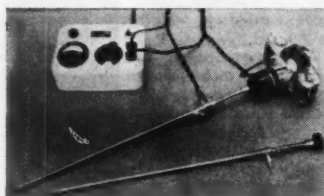


Fig. 1. Camera attached to bronchoscope.

fine-grain groundglass, make the *Alpha Alnea* the ideal camera not only for general photography but also for any special application in medicine. The *Alpha Alnea* single-lens reflex system, with its exceptionally brilliant and sharp 'life-size' image, provides utmost ease of magnification—and without the addition of complicated and expensive reflex housings, sliding attachments and other 'extras'.

The logical 45° viewing angle of the *Alpha Alnea* allows the most natural position of the head for absolutely comfortable work, especially if the camera is mounted on a close-up stand or a microscope. It is also the ideal focusing set-up for those who wear glasses.

For photomicrography the only accessory necessary is an adapter ring, which will fit any standard microscope.

A range of interchangeable lenses from 28 mm. to 3,750 mm. is available and fit any of the *Alpha Alnea* range of cameras.

Of special interest is the new 1.8/40 mm. macro-kilars lens with a pre-set diaphragm, which will focus from infinity to 4".

The *Alpha Alnea* represents the most revolutionary design in 35 mm. miniature cameras, which makes it ideally suited to the medical profession, both for standard, scientific, macro-, micro- and endoscopic photography.

Enquiries from:

Westdene Products (Pty.) Ltd., 23 Essanby House, 175 Jeppe Street, Johannesburg (and Branches).

CORRESPONDENCE

PROBLEMS OF CARDIAC ARREST

To the Editor: In Dr. Fleming's article *The Problems of Cardiac Arrest* (this Journal, 14 September 1957), there appeared the following statement: 'Hypotension is another of the anaesthetist's problems. Here there is an intentional reduction of the patient to a dangerous anoxic state'. (Italics inserted).

May I point out that this state was only reached where hypotension was produced by arterial bleeding, and that this method has long been abandoned. In the present-day method of producing controlled hypotension by means of the ganglioplegic drugs, viz. Arfonad, Ansolyen and Vegolyen, this statement is completely false. Numerous experiments done by us and other investigators have amply

demonstrated that in controlled hypotension obtained in this way there is no anoxia of the cerebral, cardiac, liver or kidney systems.

However, this is the point I wish to make. If Dr. Fleming believes his above statement to be true, then his following statement, 'It is admitted that in some fields hypotensive surgery is very necessary', is most conflicting and cannot be condoned. I stress, and stress again, that any person who considers that a particular method is capable of producing anoxia, has no right to support that method in any circumstances.

H. Bentel.

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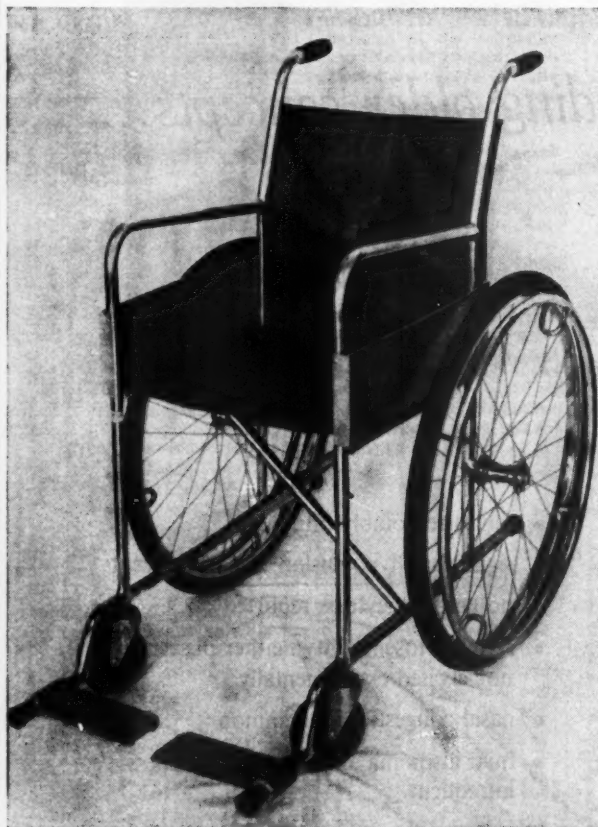
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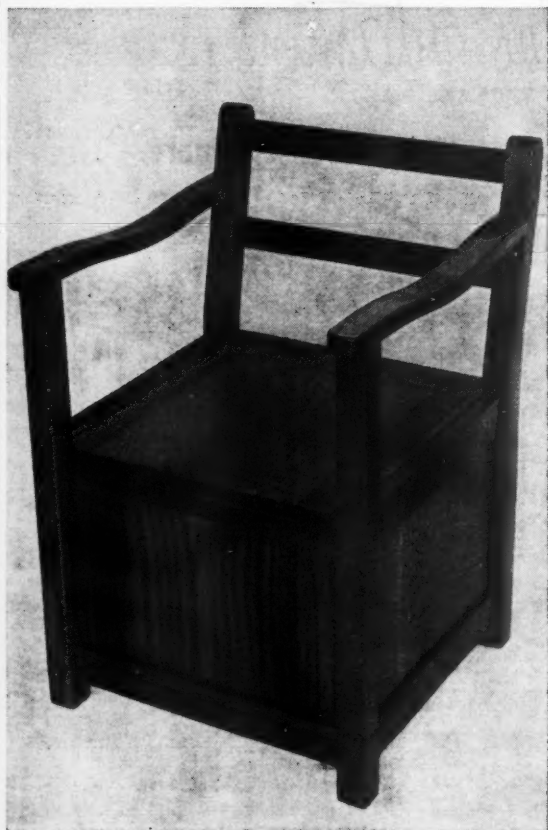
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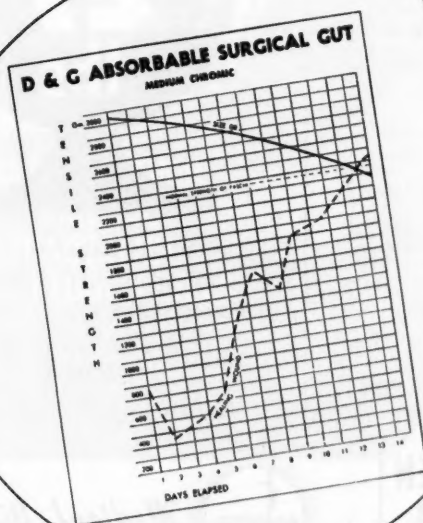
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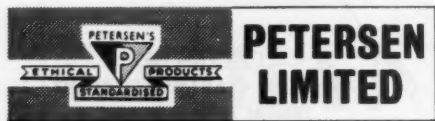
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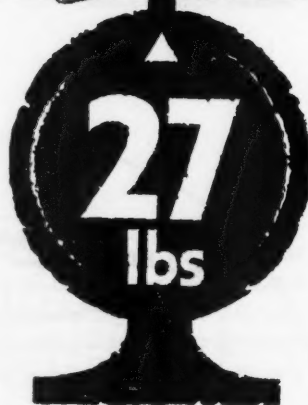
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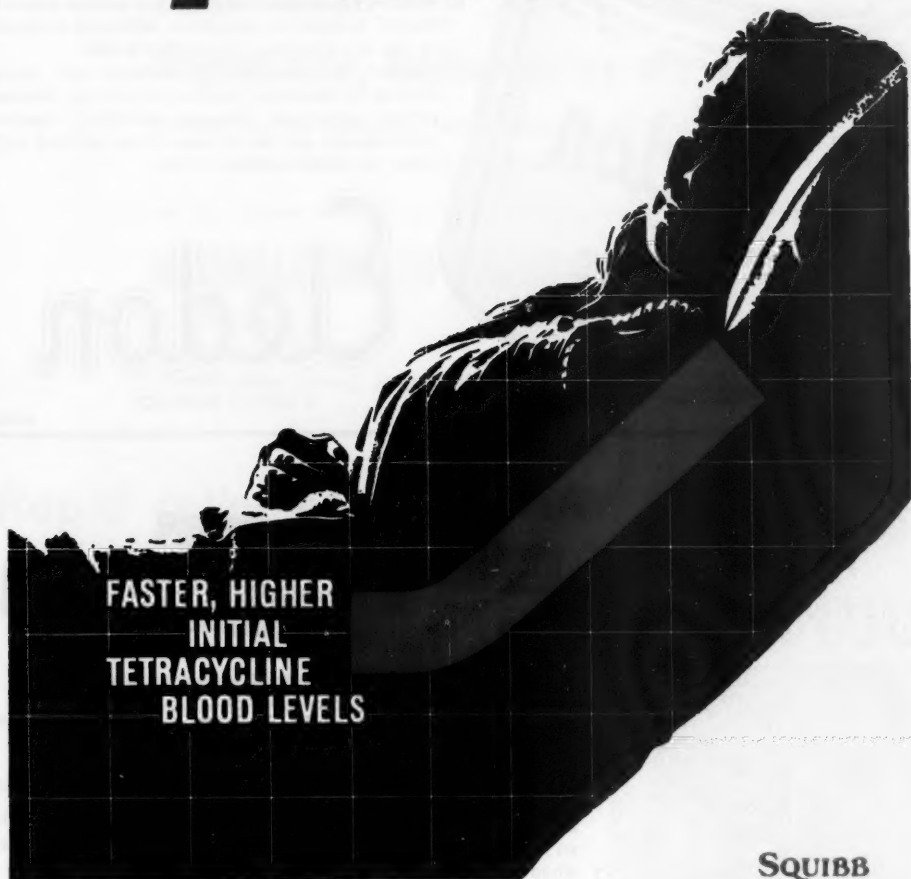
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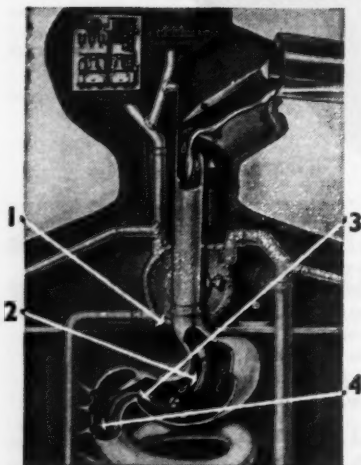
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* Effect of Buffering Agents on Absorption of Acetylsalicylic Acid. J.A.M. Pharm.A., 36: 21, Jan., 1950.



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She complained of fatigue and anorexia. Her blood pressure, pulse rate and temperature were normal. Her hæmoglobin level? Only 55%.

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When Mrs. N. came a week later for the last injection, her morale had considerably improved. The doctor was not surprised. She would be very close to 100% Hb in another six weeks.

Meanwhile he was assured that iron deficiency would not recur. The injections had provided ample iron for fœtal demands. Iron would be ready for hæmoglobin synthesis after labour.

The harvest was in

Labour started 2 weeks early. Twin boys were born. Blood loss 16 oz. But Mrs. N. soon recovered — her iron stores were full.

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Imferon is the first and only satisfactory preparation of Intramuscular Iron. Further information, with references to recent literature on "body iron stores" and the "mucosal block" may be had from Fisons Chemicals (S.A.) (PTY.) LTD., P.O. BOX 5788, JOHANNESBURG.

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Abbott's vitamins and minerals
for pregnancy and lactation



DICALETS



Two balanced-formula Dicalets taken t.i.d. supply 100% of the recommended daily dietary allowances of iron, calcium, phosphorus and six essential vitamins plus B₁₂, folic acid, pyridoxine and seven trace minerals.

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